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Investigation of severe hailstorm over northwest India during 2020- A satellite perspective

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Abstract

Hailstorms are highly destructive severe weather events and cause catastrophic destruction to livestock and property. Satellite data is beneficial to delineate the deep convective clouds over information-sparse ocean and densely populated urban areas. This study investigates severe hailstorm events over parts of northwest India during the premonsoon period of 2020. The satellite data of research if from the imager payload of the INSAT 3D geostationary satellite. The synoptic features associated with hailstorm events are also studied. The study utilizes the visible and infrared channel data to understand convective cloud development and subsequent intensification. The hailstorm events are also explored with NWP model data to understand the synoptic signatures which led to the devastating severe weather event over north India. The study also tries to identify the limitations of the utilized data and further scope for improvement in the future prediction of such severe weather events.

Keywords: Hailstorm, INSAT3D, NWP model, Severe weather, India.